

09/488,865

**REMARKS**

The Office Action dated February 25, 2003 does not indicate whether the amendment filed on December 13, 2002 was entered and instead only states that the amendment dated "12/3/02 is noted." Since the Office Action dated February 25, 2003 indicates that the previous amendment is "non-responsive", this amendment is filed with the understanding that the December 13, 2002 Amendment was not entered. Therefore, this amendment modifies the claims, cancels claims, and adds claims to the originally filed application, with the understanding the December 13, 2002 Amendment was not entered.

Claims 1-7 and 23-35 are all the claims pending in the application. Claims 8-22 are cancelled as being directed to a non-elected invention and claims 23-35 are added to further define the invention. Claims 1-7 stand rejected on prior art grounds.

**I. Responsiveness of Previous Amendment Under 37 C.F.R. 1.111(b)**

As explained in MPEP § 714.02, 37 C.F.R. § 1.111 requires that "the reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action." In addition, MPEP § 714.03 provides that where an amendment substantially responds to the rejections, objections, or requirements in a non-final Office action but contains a minor deficiency, the Examiner should notify Applicant that the

09/488,865

omission must be supplied.

However, Applicants submit that the February 25, 2003 Office Action does not comply with MPEP §714.03 and that the amendments made in the December 13, 2002 Amendment should have been entered and examined. More specifically, the Office Action states that the December 13, 2002 Amendment changes the "scope of the invention" and is therefore not responsive. The Office Action also states that claims 30 and 37 recapture the non-elected invention.

In response thereto, Applicants submit that one valid purpose of an amendment is to change the scope of the claims (more specifically, the Office Action states that claims 23 and 42 change the scope of the invention). Therefore, Applicants response on December 13, 2002 is clearly "responsive" to the previous rejection in that it attempts to amend the claims so as to change the scope of the invention to overcome prior art rejections. Further, the non-elected claims 8-22 were canceled and the single prior art rejection and both references (Barr and Shingai) were distinguished from the claimed invention at length.

The Office Action appears to indicate that independent claims 23 and 42 are directed to the elected invention and the only reason that the addition of these claims is considered non-responsive is that these claims change the scope of the invention. Applicants agree that these claims define a different scope than independent claim 1; however, this is precisely what makes the December 13, 2002 Amendment "responsive" because a different scope of invention is being defined in response to the rejection. Further, the applied references are fully distinguished from newly added claims 23 and 42. Therefore, at least with respect to claims 23 and 42, Applicants

09/488,865

submit that the December 13, 2002 Amendment is fully responsive.

With respect to claims 30 and 37, which the Office Action proposes are directed toward the non-elected invention, Applicants note that no formal written restriction requirement was ever made in this application. Therefore, the Examiner's reasons regarding which features of Claims 8-22 relate to a separate invention cannot be known. Applicants note that newly added claims 30 and 37 in the December 13, 2002 Amendment defined a method for translating physical memory cells coordinates to logical addresses. Non-elected claims 8, 13, and 18 defined a different invention that translated address buffer coordinates for a device under test that has two or more similar repeatable units. Therefore, it is improper for the Examiner to conclude that claims 30 and 37 are directed to the invention defined by previous claims 8, 13, and 18 because there has not been shown a similarity between claims 30 and 37 and the non-elected claims.

8/27/02  
9/13/02

To the contrary, Applicants submit that all the newly added claims are directed to the same invention defined by independent claim 1 (with slightly modified scope) because independent claim 1 defines a method for determining locations by applying a set of displacement and mirror factors. Applicants note that all the newly added claims provide a method of identifying physical memory cell coordinates through the performance of some type of displaced operation. Thus, any reasoning that draws a conclusion regarding claims 30 and 37 being directed to the non-elected invention is incorrect and unsupported by the claim language. This is especially true considering that the file wrapper history does not specify what aspects of Claims 8-22 are considered as a separate invention.

In view of the forgoing, Applicants submit that the December 13, 2002 Amendment

09/488,865

added claims that were directed to the elected invention and fully responded to all previous objections and rejections in the September 13, 2002 Office Action. Therefore, the December 13, 2002 Office Action was full responsive and the February 25, 2003 Office Action is improper.

Applicants position is further supported by the statement in the February 25, 2003 Office Action which requires Applicant to "submit a complete reply." Such a statement insinuates that there was some form of an omission in the December 13, 2002 Amendment. However, the February 25, 2003 Office Action does not specify any matter that was omitted. Instead, the February 25, 2003 Office Action merely states that the December 13, 2002 Amendment changes the scope of the invention being defined and is therefore non-responsive. Applicants submit that one fundamental purpose of an amendment is to change the scope of the invention being defined. Therefore, the December 13, 2002 Amendment was clearly responsive.

In view of the forgoing, Applicants request that the Examiner issue another non-final Office Action clarifying the following issues. The new non-final Office Action should clarify the distinguishing features of the elected versus the non-elected invention. In addition, if any of claims 22-42 in the December 13, 2002 Amendment are considered to be directed to a non-elected invention, the new non-final Office Action should explain the specific reasons why the claim language supports such a conclusion. Further, if there was an "omission," Applicants should be informed of the omission and should be given reasonable time to supply the omitted matter.

09/488,865

## **II. The Prior Art Rejections**

Claims 1-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Barr (U.S. Patent No. 5,758,056) in view of Shingai (U.S. Patent No. 5,293,612). More specifically, the Office Action states that Barr discloses a memory system having address identification, comprising determining means for determining addresses of defective memory locations. (see abstract and col. 3, lines 50-52). The Office Action admits that Barr does not disclose a means for determining a physical location of the defective address. However, the Office Action asserts that Shingai discloses a means for translating a virtual address into a physical address by using a look up table, (see col. 3, lines 14-16). Therefore, the Office Action concludes that it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the teaching of Shingai into the invention of Barr to produce a physical address location of the defected address to correct errors.

Barr discloses a memory system which restores full functionality to a dynamic random access main memory having at least one defective bit. In Barr, the memory system is integrated on an industry standard memory module which is plugged into a host computer system. The memory module incorporates a block of DRAM main memory, an SRAM replacement memory, a non-volatile memory which stores a map of defective memory locations within the main memory, and a process control module (PCM) operable in multiple modes, which manages a defective address identification and replacement process. The PCM, which contains high-speed registers, in addition to decoding and control logic, and is implemented as a high-speed

09/488,865

application-specific integrated circuit (ASIC). The PCM, which is coupled to both the host system memory address and data buses, recognizes addresses of defective memory locations within the main memory block and, in response to such recognition, suppresses output from the main memory block and provides a replacement address within the high-speed SRAM memory. The data stored at the replacement address is output to the system data bus. The process operates with sufficient speed to ensure that there is no degradation in main memory access time. The non-volatile memory can be updated by the host system to correct newly discovered defects in the main memory without removing the memory module from the system.

Shingai discloses a method and process for providing a memory dump of less than the entire contents of memory. In Shingai, the memory locations to be dumped are selected on the basis of recency of use, so that there is a high probability that portions of memory needed for analysis or evaluation of the computer system will be included in the selective dump. Preferably, the selection is made on the basis of information or hardware which is already provided in the computer system. In Shingai, memory to be dumped is selected on the basis of memory locations encoded for by a translation lookaside buffer.

To the contrary, with the invention, a device under test (e.g., memory device) is tested for defects and a two-dimensional failmap is produced on a real time display. In order to identify the electrical location of a given defective element of the device under test, the two-dimensional coordinate of the failmap is translated into an n-dimensional logical location (e.g., word-line, bit-line, DQ, etc.). More specifically, as defined by independent claim 1, the invention includes "determining the physical location of said unit by applying a set of displacement and mirror

09/488,865

factors to the address."

Conventionally, a programmer would prepare an algorithm or look up table relating to the entire device under test to perform the address translation. However, with the invention, the user (without the aid of a programmer) only needs to prepare a lookup table relating to the smallest repeatable unit of the device under test. In addition, the user supplies coefficients relating to linear operation on the lookup table values and horizontal and vertical mirroring and displacement from the reference block (as well as any additional required features) and the invention applies the look up table to all other smallest repeatable units to perform the address translation for the entire device under test. Also, the recursive nature of the invention requires substantially reduced input from the user by defining larger and larger repeatable units.

Thus, with the invention, only sets of 6 coefficients and a look up table and the recursive partitioning information are required from the user and the assistance, design time, debugging time and other costs associated with conventional customized address translation programs are avoided.

Barr and Shingai are completely unrelated to the invention because they relate to (hardware) detection methods of locating defective memories. To the contrary, the claimed invention translates any physical cell coordinate (x, y) location (not just failed locations) to a logical, electrical, or structural address. Therefore, neither applied reference teaches or suggests the invention as defined by the claims. Therefore, Applicants respectfully submit that the application as defined by the present claims is patentable and that the application is in condition for allowance.

09/488,865

**III. Formal Matters and Conclusion**

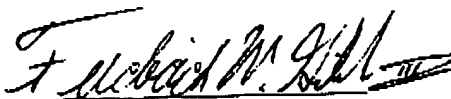
In view of the foregoing, Applicants submit that claims 1-7 and 23-35, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

Please charge any deficiencies and credit any overpayments to Attorney's Deposit  
Account Number 09-0456.

Respectfully submitted,

Dated: 3/13/03



Frederick W. Gibb, III

Reg. No. 37,629

McGinn & Gibb, PLLC  
2568-A Riva Road  
Suite 304  
Annapolis, MD 21401  
410-573-1545  
Customer Number: 29154